CLAIMS

1. A method for sealing explosives from moisture in a blast hole, the method comprising:

inverting an end portion of a tubular liner having an unexpanded configuration along its length and an open end portion in an expanded configuration;

operatively securing the expanded configuration of the inverted end portion to a securing structure positioned at an upper portion of the blast hole;

blowing air downward through the securing structure and into the expanded configuration of the tubular liner so that the unexpanded configuration of the tubular liner advances into the blast hole to invertedly expand and progressively advance the tubular liner into the blast hole with radial expanding movement of the tubular liner against a wall of the blast hole; and

pouring explosive material into the expanded tubular liner with the tubular liner sealing the explosive material from the moisture in the blast hole.

2. The method of claim 1, further comprising inserting an air-relief pipe into the blast hole with a perforated end portion of the air-relief pipe positioned at a lower portion of the blast hole and an exposed end portion of the air-relief pipe extending out of the blast hole.

3. The method of claim 2, further comprising displacing air from the blast hole through the air-relief pipe as the tubular liner expandedly advances into the blast hole.

4. The method of claim 1, positioning a liner roll including the tubular liner in the unexpanded configuration on a roller stand above the securing structure.

5. The method of claim 1, wherein said securing comprises wrapping an inverted end portion of the tubular liner around an external surface of the securing structure so that the securing structure at least partially sandwiches the inverted portion of the tubular liner against the upper portion of the blast hole.

6. The method of claim 5, wherein said wrapping comprises clamping the inverted end portion of the tubular liner against the securing portion.

7. The method of claim 1, wherein said blowing comprises compressing air through a nozzle opening defined in a cap member operable to substantially enclose the blast hole and coupled to the securing structure.

8. The method of claim 7, wherein said blowing comprises advancing the unexpanded configuration of the liner into the blast hole through a liner passage defined in the cap portion.

9. The method of claim 1, wherein said blowing comprises advancing the tubular liner toward a lower portion of the blast hole so that the tubular liner is substantially inverted and in the expanded configuration except for an unexpanded end portion including a sealed tail end disposed at a lower portion of the blast hole within the expanded configuration of the tubular liner.

10. The method of claim 9, wherein said pouring the explosive material comprises at least partially expanding the unexpanded end portion radially in the expanded configuration so that the sealed tail end advances toward a bottom of the blast hole and is maintained within the expanded configuration of the tubular liner at the lower portion thereof.

11. A blast hole sealing system configured to substantially seal explosive material in a blast hole from moisture, the apparatus comprising:

a securing structure operable to be disposed over an upper portion of the blast hole;

a cap member defining a nozzle opening and a liner passage therein and operable to attach to a top portion of the securing structure;

a tubular liner including an unexpanded configuration having a length with an openable-expandable end and a sealed tail end, said openable-expandable end operable to be disposed through a liner passage in the cap member so that an end portion disposed

therethrough is invertedly opened in an expanded configuration and operatively secured to the securing structure; and

an air compressor operatively coupled to the cap member and operable to compress air through the nozzle opening in the cap member against the expanded configuration of the tubular liner to invertedly expand and progressively advance the tubular liner into the blast hole with radial expanding movement of the tubular liner along a wall length of the blast hole, said air compressor operable to invertedly expand the tubular liner against the wall length of the blast hole so that the sealed tail end is disposed at a lower portion of the blast hole within the expanded configuration of the tubular liner;

said tubular liner being operable to receive the explosive material and seal the explosive material from moisture in the blast hole.

12. The system of claim 11, further comprising an air-relief pipe operable to be positioned in the blast hole and operable to allow air to escape the blast hole as the tubular liner advances into the blast hole.

13. The system of claim 12, wherein the air-relief pipe includes an exposed end portion extending out of the blast hole and a perforated end portion positioned at the lower portion of the blast hole.

14. The system of claim 11, wherein said tubular liner is rolled-up in a liner roll in the unexpanded configuration.

15. The system of claim 14, further comprising a roller stand operable to hold the liner roll over the cap member to feed the tubular liner through the liner passage defined in the cap member.

16. The system of claim 11, wherein said securing structure comprises a clamping member operable to secure the end portion of the tubular liner to the securing structure.

17. The system of claim 11, wherein said securing structure is operable to sandwich the end portion of the tubular liner against an upper peripheral surface portion of the blast hole.

18. The system of claim 11, wherein said tubular liner comprises a linear low density polyethylene.

19. A method of expanding and sealing a liner within a blast hole with substantially non-axial movement of the liner against a blast hole wall, the method comprising:

inverting an end portion of a tubular liner above the blast hole in an unexpanded configuration with an end portion in an expanded configuration;

operatively securing the expanded configuration of the end portion to a securing structure positioned over an upper portion of the blast hole; and

blowing air downward through the securing structure and into the expanded configuration of the tubular liner so that the unexpanded configuration of the tubular liner advances into the blast hole to invertedly expand and progressively advance the tubular liner into the blast hole with radial expanding movement of the tubular liner against a wall of the blast hole.

20. The method of claim 19, further comprising inserting an air-relief pipe into the blast hole with a perforated end portion of the air-relief pipe positioned at a lower portion of the blast hole and an exposed end portion of the air-relief pipe extending out of the blast hole.

21. The method of claim 20, further comprising displacing air from the blast hole through the air-relief pipe as the tubular liner expandedly advances into the blast hole.